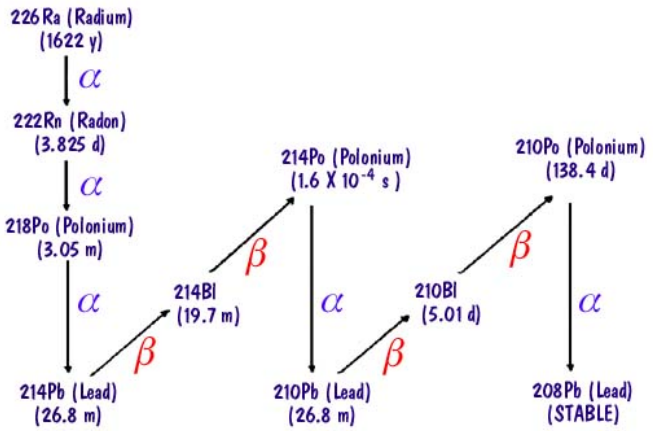
P-8.5 Interpret a representative nuclear decay series.

Revised Taxonomy Levels 2.1 B Interpret conceptual knowledge

In physical science students were introduced to the concept of radioactive isotopes. Alpha, beta, and gamma emission may not have been covered.

It is essential for the student to:

- Understand that a beta decay results when a neutron transforms into a proton and a beta particle.
- Understand that an alpha particle is a helium nucleus which consists of two neutrons and two protons.
- Understand how isotopes are transmuted into new isotopes trough alpha and beta decay.
- Understand half-life.
- Interpret a radioactive decay series such as the one below



Radium-226 (Uranium-238) decay series with half-lives.

Assessment

The verb for this indicator is interpret which means to change from one form of representation to another. Given a nuclear decay series the students should understand what is happening and relate this in words.

Because the indicator is written as conceptual knowledge, assessments should require that students understand the "interrelationships among the basic elements within a larger structure that enable them to function together." In this case, assessments should show that students understand the transformations involved in the decay series.